

Status of Summer Steelhead on Mainstem Redwood Creek

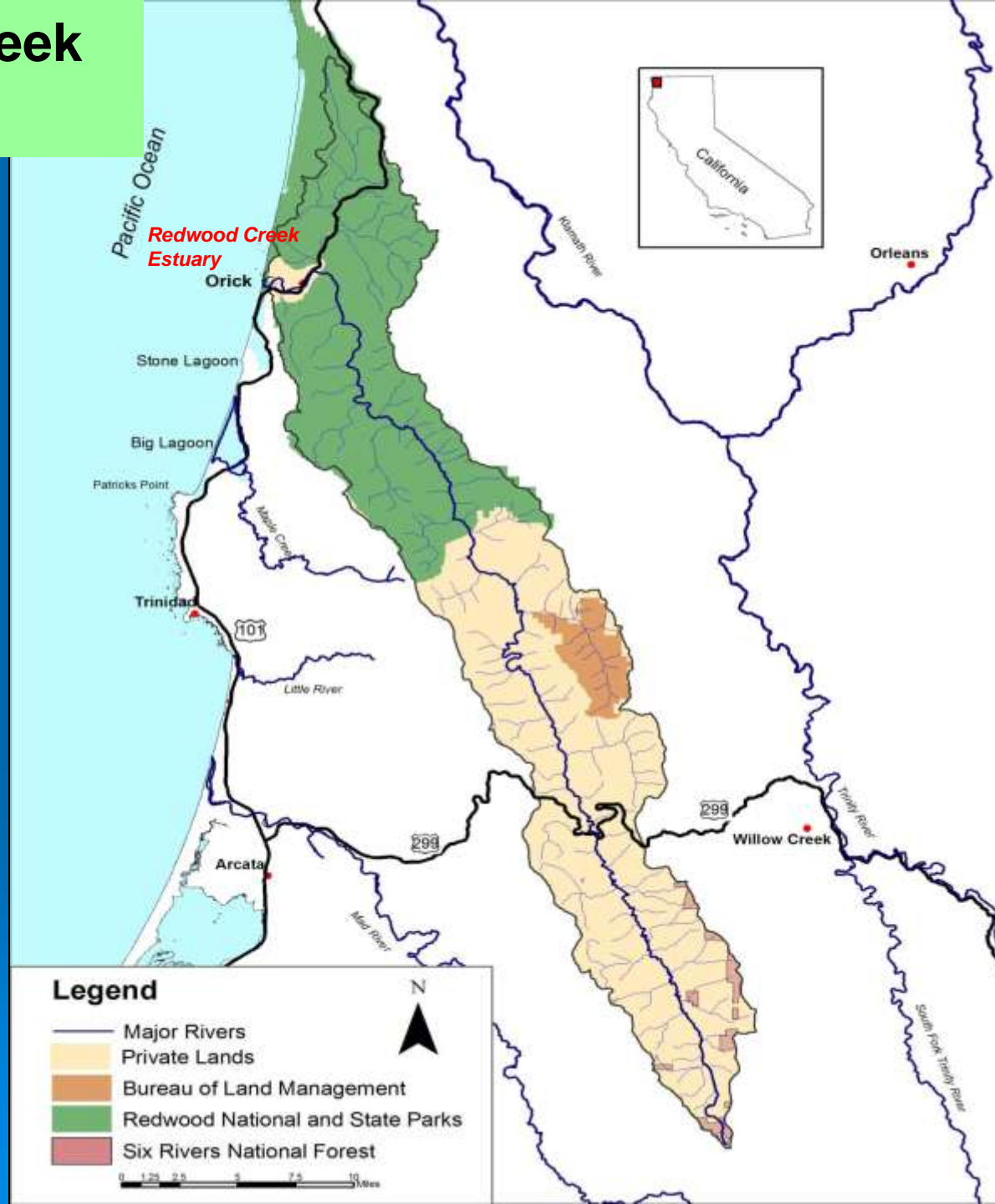


David G. Anderson
NPS Fishery Biologist

Redwood Creek Symposium
December 10, 2014



Redwood Creek Watershed



Redwood Creek Summer Steelhead

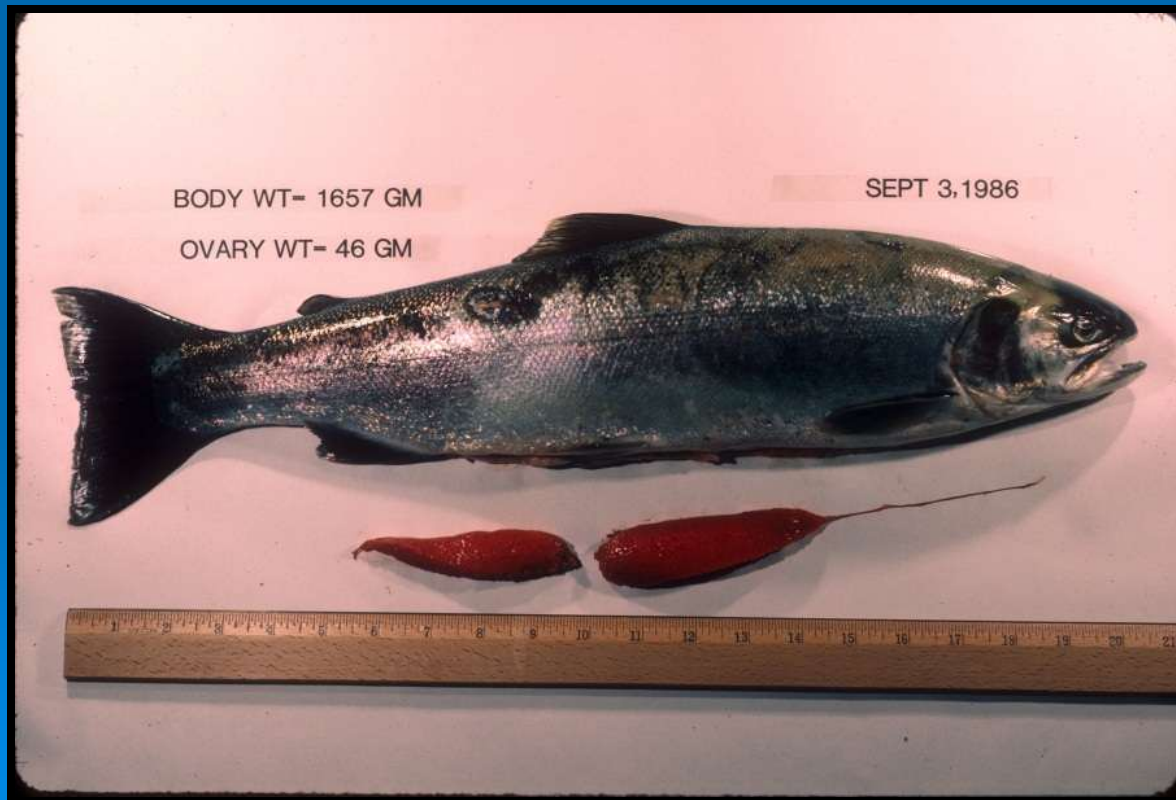


1968 Fishing Map



Redwood Creek Summer Steelhead

- Determined to be Summer Steelhead, not runbacks
 - Based on summer ovary to total weight ratio



Summer Steelhead

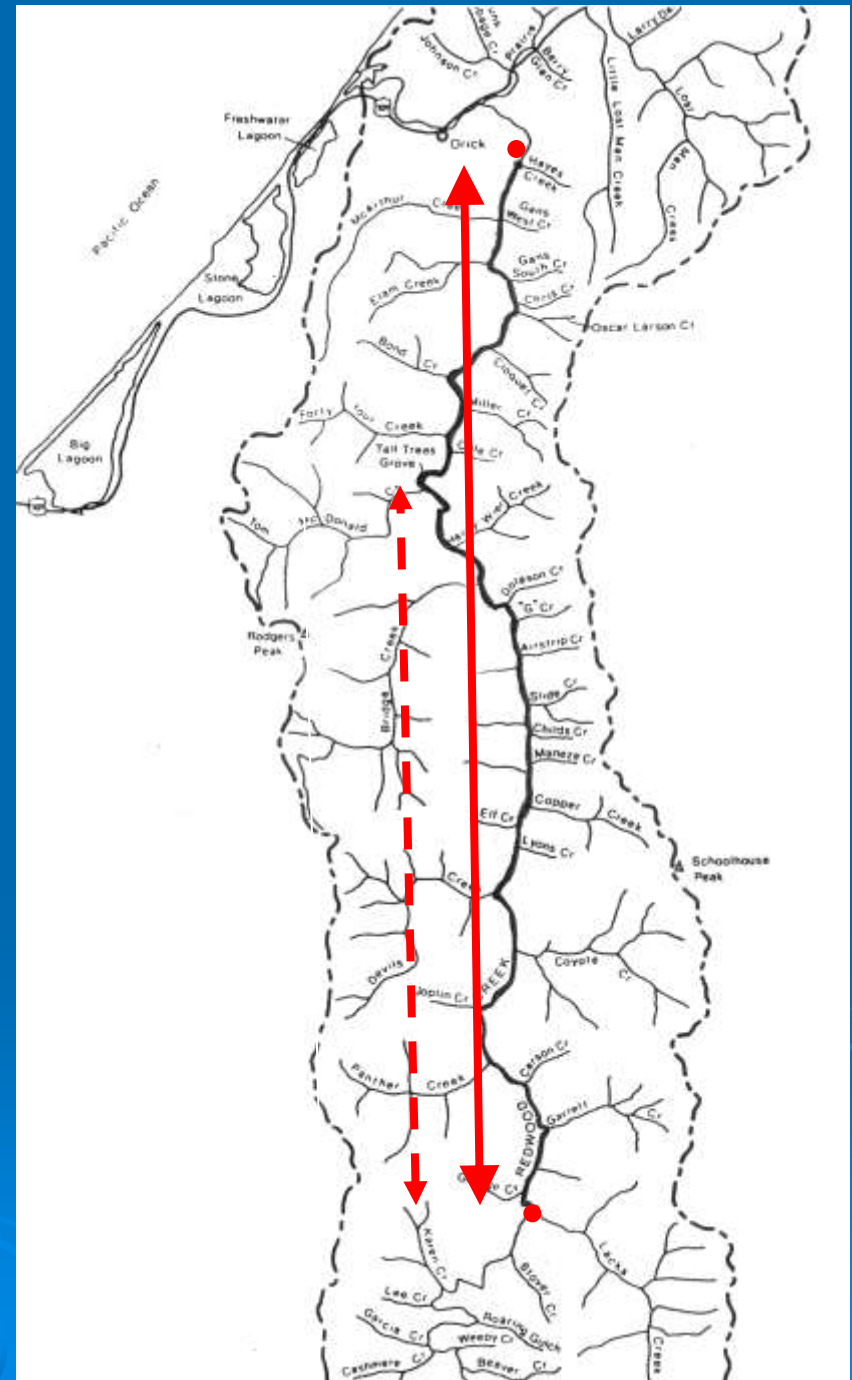
(Oncorhynchus mykiss)

- Found in pools and pools associated with cooler tributary inflow
- Pools with structure
 - Boulders
 - Woody Debris



Monitoring

- Surveys started in 1981
 - Continuing to the present (2014)
 - 34 years
- Snorkel Survey Reach
 - Lacks Creek to Downstream of Hayes Creek
 - RNP and Green Diamond
- 38.9 km (24.1 miles)
 - 36% of mainstem Redwood Cr
- 7 days
 - Last week of July
 - First week of August



➤ Snorkel Crews

- Mask and Snorkel
- 5/4 Surfsuits w/Hood
- Gloves
- Wading Boots
- Dive Weights
- Dry Bags



1990s



2010s



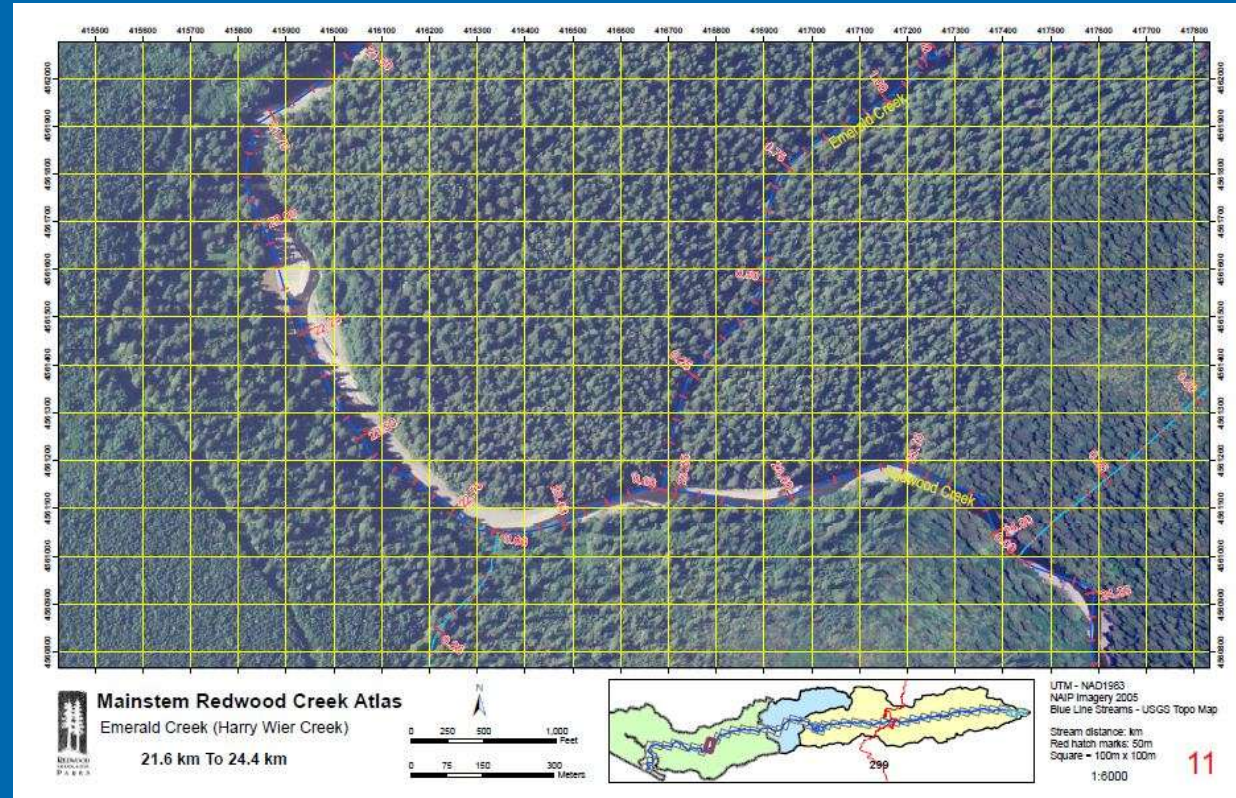
Stream Atlas

GIS MAPS

Red Ticks - 50 meter
intervals for river
kilometer

UTM Grid – 100 meters

GPS – sometimes
spotty coverage, and
not waterproof



Diver Safety

Things to be
aware of :
Natural and
Human

Safety Plan
Radios
Communication
Dive Buddy Awareness

Streamside
Grow

Slips, Trips, & Falls
Entanglement
Giardia
Poison Oak
Hypothermia



➤ Mainstem

Redwood Creek

- 'Rocky Gorge' area and above
 - Deeper pools
 - More Gradient
- Lower river
 - Wider and shallower



Other Fish Recorded

- Coastal Cutthroat Trout
- Juvenile Salmonids
 - Chinook
 - Steelhead
 - Coho
- Suckers & Sculpin & Threespine Stickleback
- Spring Chinook (1988)
- Sockeye (2005 & 2007)



Cutthroat Trout



Sockeye Salmon



Schools of Suckers

Other Species



Rough-skinned Newt

- Lamprey
 - redds
- Amphibians



Western Toad Tadpoles

Aquatic Mammals

- River Otters
- Beaver



Beaver Scat

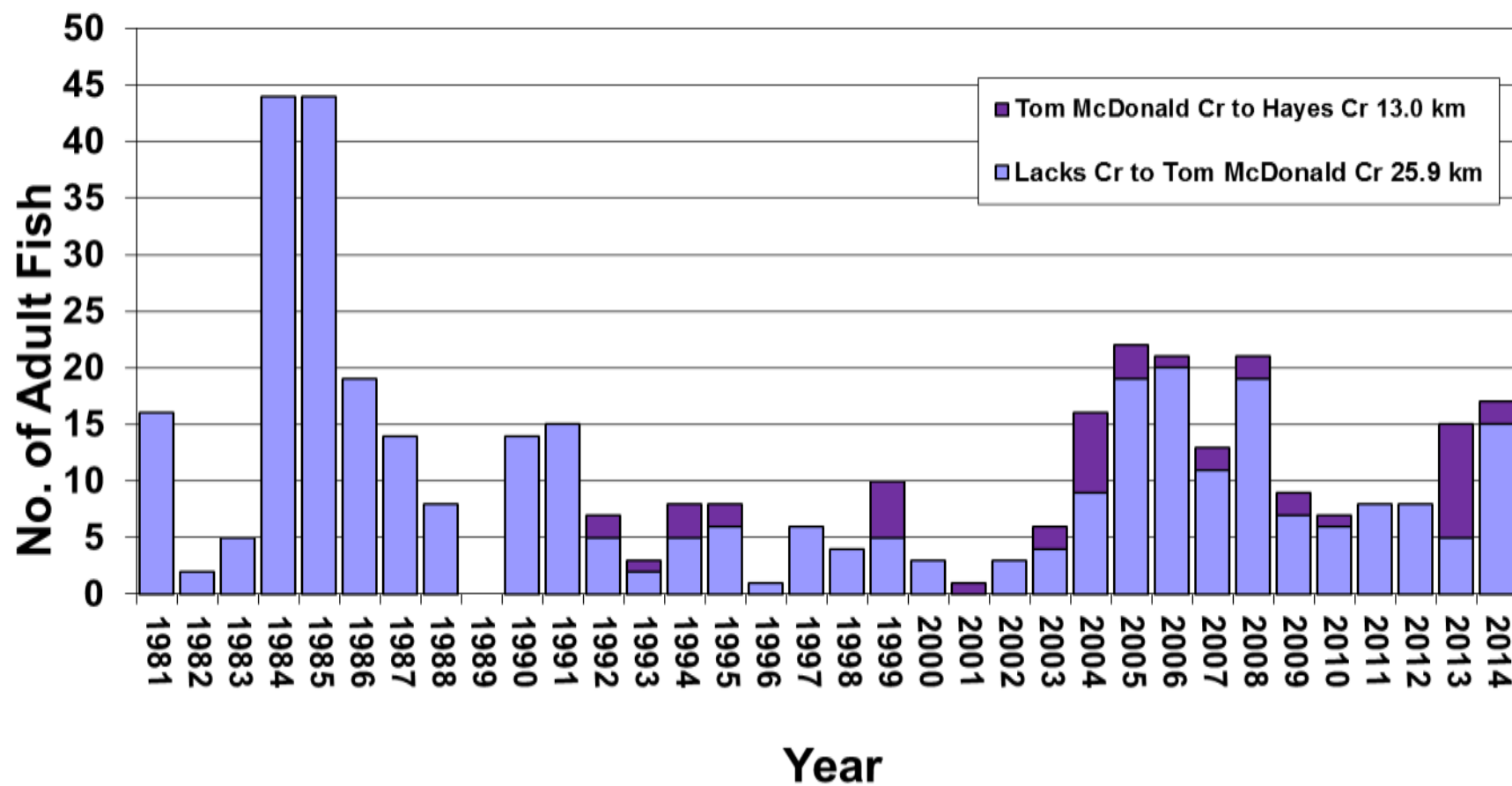


Rare Species

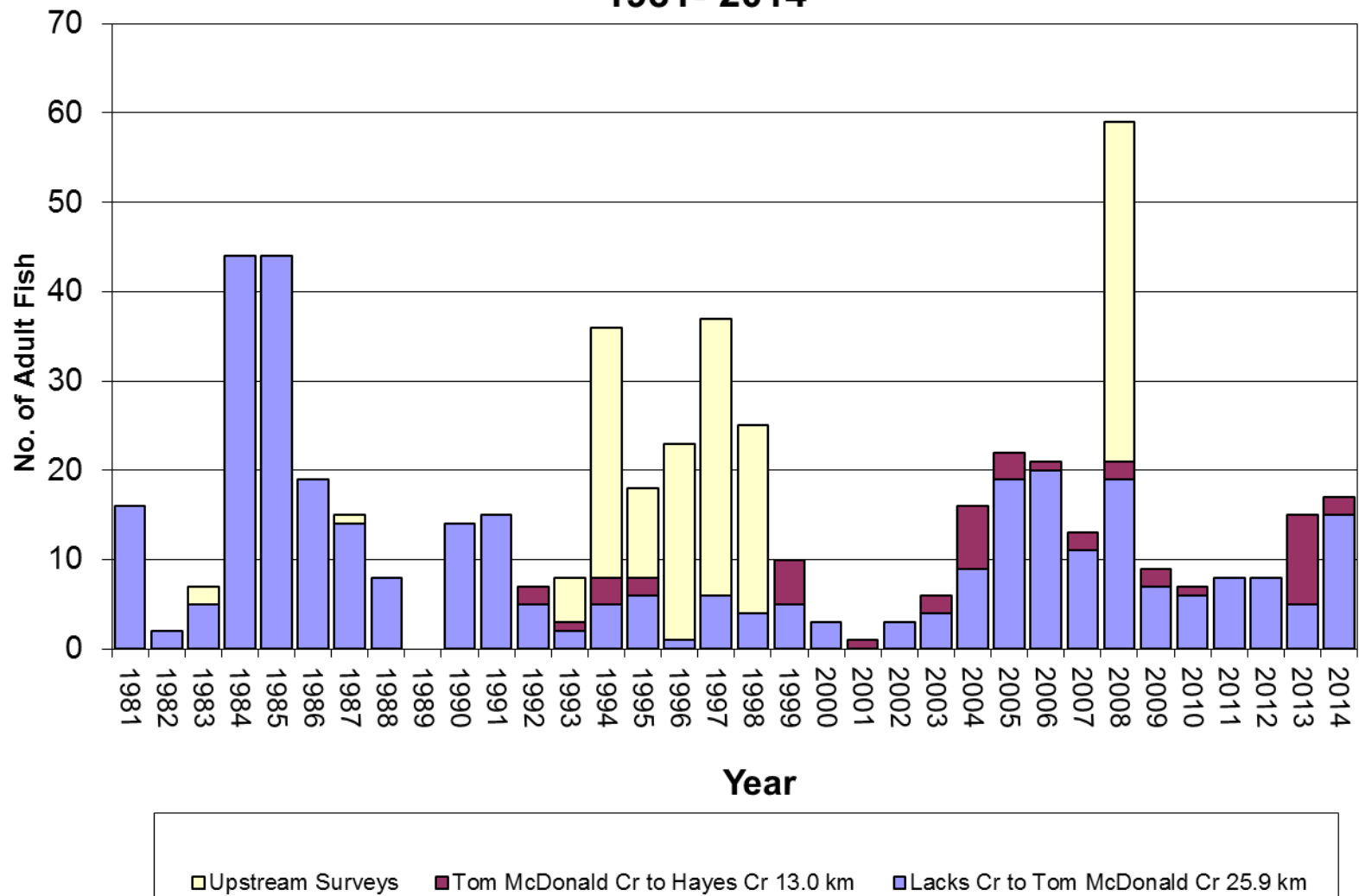
- Western Pearlshell Freshwater Mussels
 - Long-lived



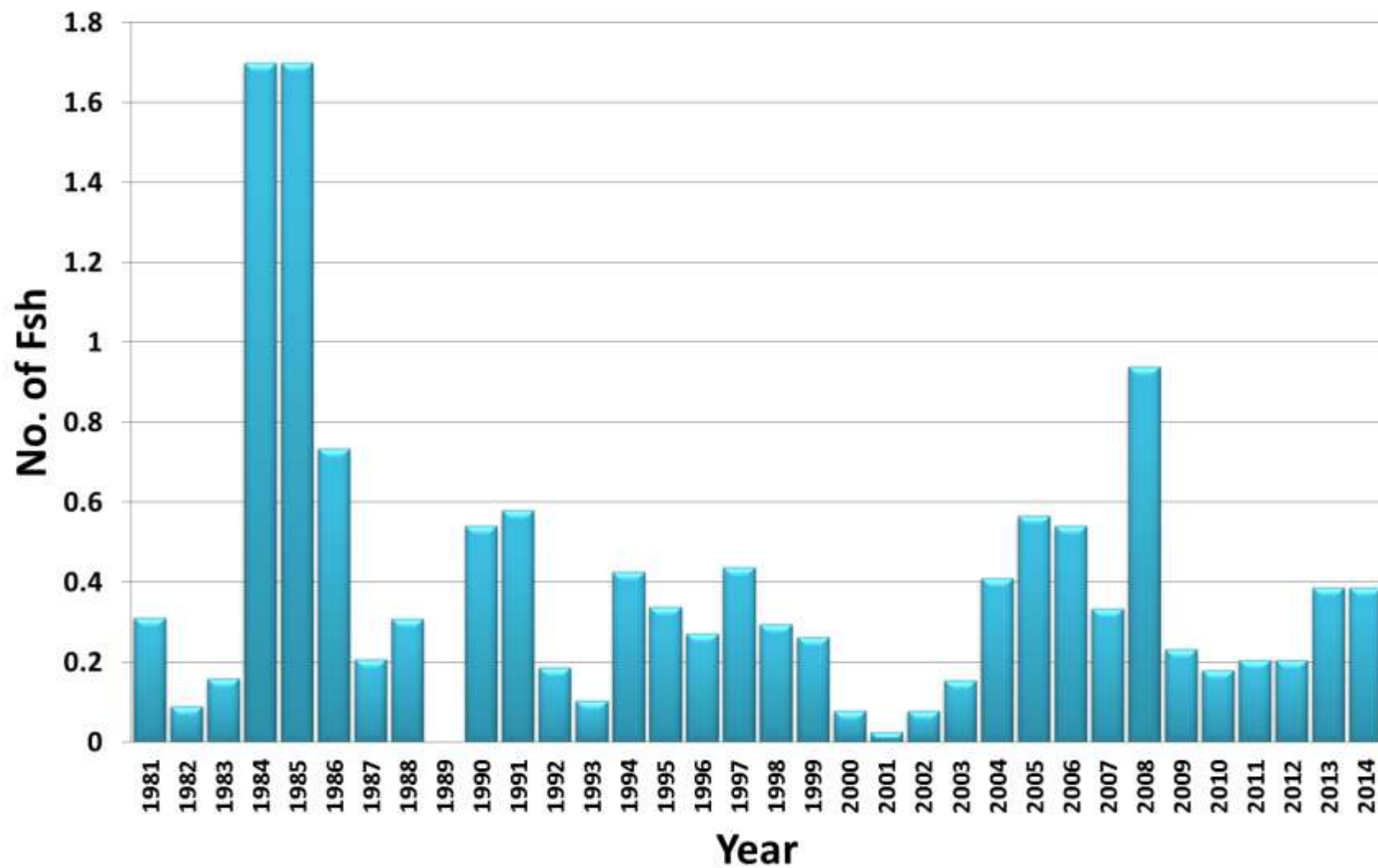
Redwood Creek Summer Steelhead Surveys 1981- 2014



Redwood Creek Summer Steelhead Surveys 1981- 2014



Redwood Creek Summer Steelhead Per Kilometer

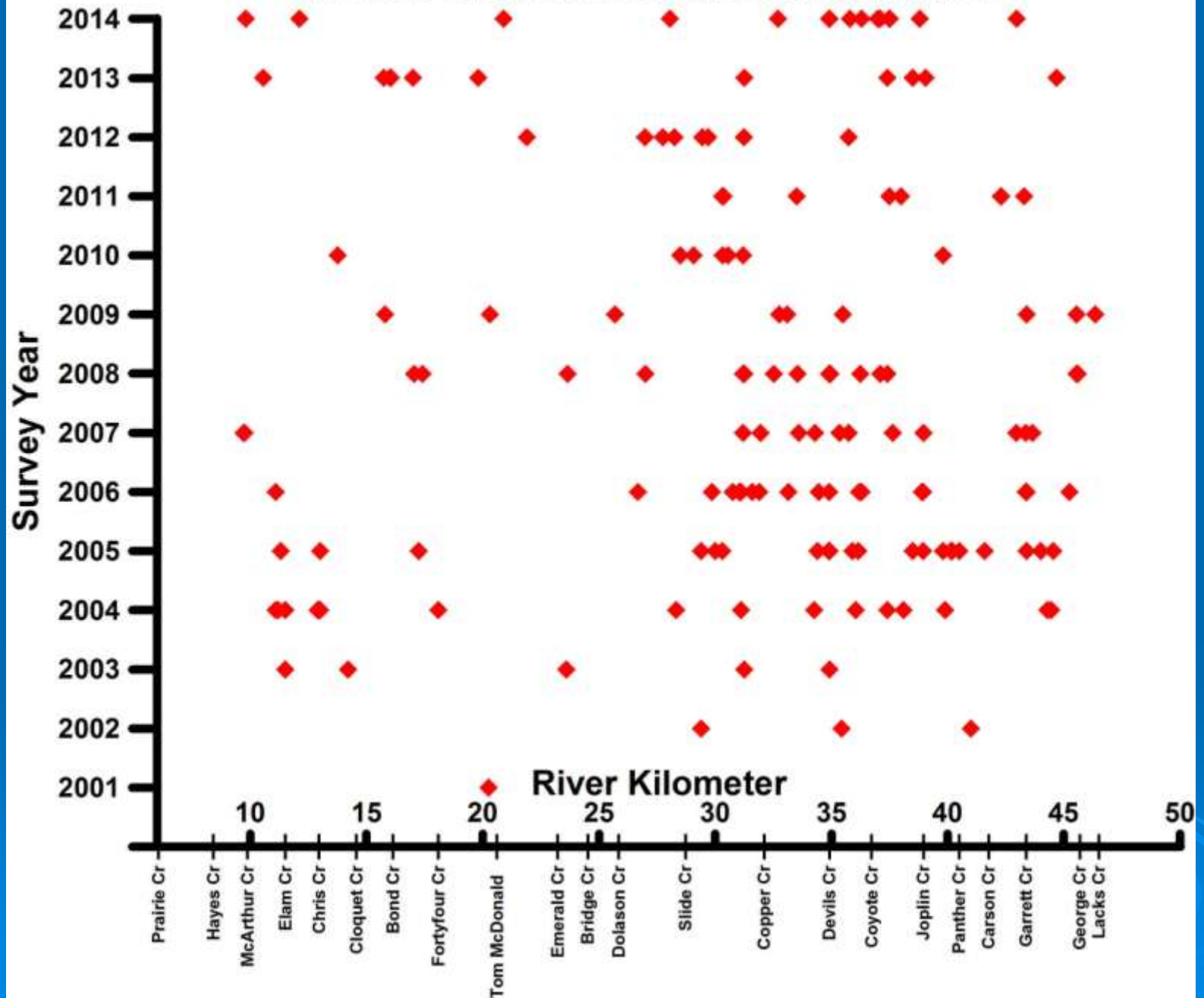


Steelhead River Mortality

Since 1992

5 Dead Summer Steelhead Observed





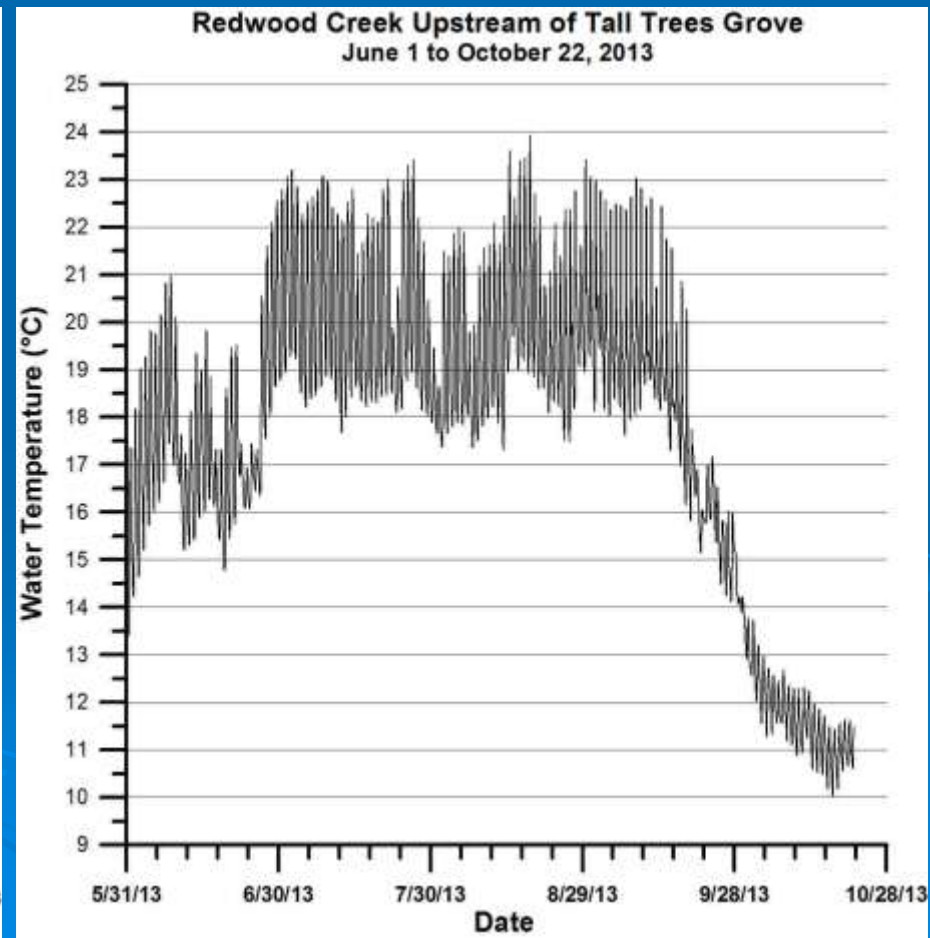
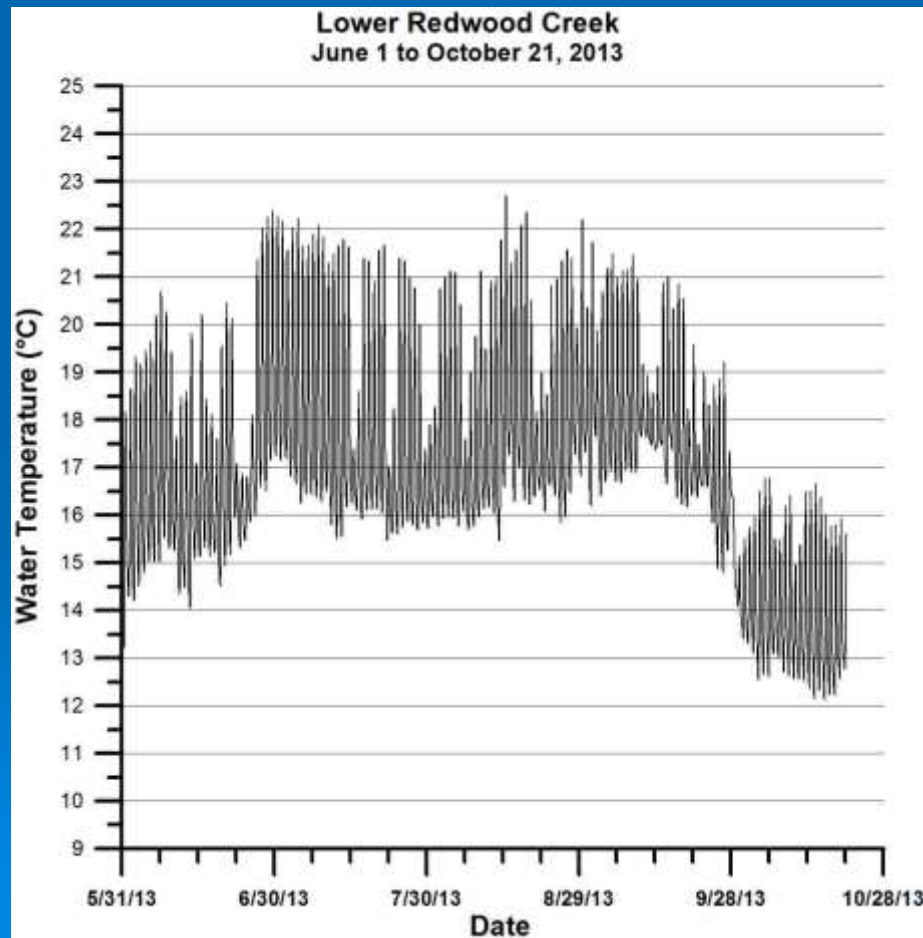
July and August 2013

Mean 17.8°C

≥ 18°C 35%

Mean 19.96°C

≥ 18°C 94%



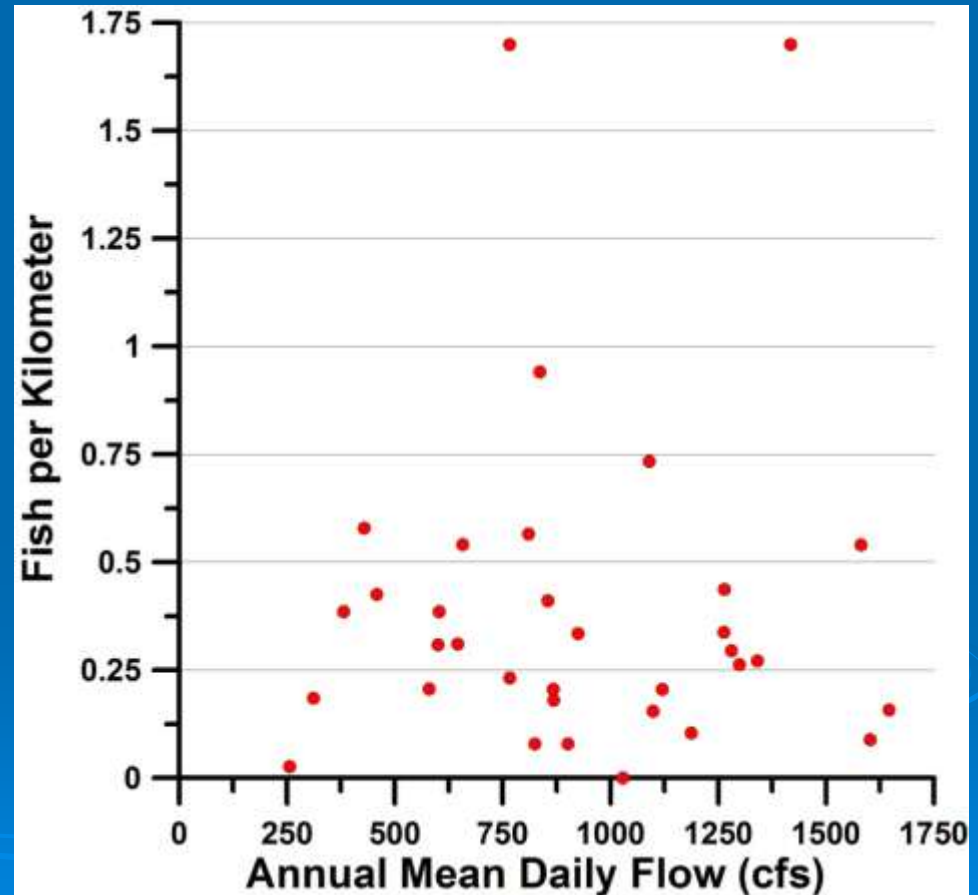
Tributary Water Temperature

- All Tributaries are colder than the corresponding Redwood Creek temperature measured at the same time.
- Westside tributaries are generally cooler than eastside tributaries, a pattern repeated in all past surveys
- 2013 Mean Temperature
 - 13.0°C Westside
 - 13.6°C Eastside



Drought – Is Low Flow Affecting Summer Steelhead Numbers Observed?

- Fish No./km vs. Orick Annual Mean Daily Flow
- (1981 – 2014)
- Correlation
 - 0.05



2011 NOAA Status Update

- “Of continued concern is the depressed status of at least two of the remaining summer-run populations in the DPS, Redwood Creek and Mattole River. Although surveys within these watersheds do not typically encompass all available over-summering habitats, the chronically low numbers seen during surveys in these rivers suggest that both populations are likely at high risk of extinction.”



- STATUS REVIEW UPDATE FOR PACIFIC SALMON AND STEELHEAD LISTED UNDER THE ENDANGERED SPECIES ACT: SOUTHWEST

- 20 May 2011



Questions?



